



DEPARTMENT OF CONSERVATION

Fact Sheet

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Division of Oil, Gas, and Geothermal Resources

June 2016 Los Angeles Orphan Well Plugging Project

GENERAL INFORMATION

- ◆ The Division of Oil, Gas, and Geothermal Resources – part of the Department of Conservation -- oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells.
- ◆ One of the Division's functions is ensuring that wells for which there is no responsible operator – known as orphan wells -- are properly plugged and abandoned.
- ◆ The funds to do this work come from an assessment on industry. The Division is authorized to spend up to \$1 million per year to plug and abandon orphan wells. Contractors are hired to do the work and DOGGR supervises the operations to make sure the public is protected.
- ◆ Since 1977, the Division has plugged more than 1,350 orphan wells at a cost of more than \$27 million. As of 2015, there were 107 wells on the waiting list to be plugged; seven have been properly plugged in 2016. The Division prioritizes sites that leak or are close to residential or environmentally sensitive areas.

LOS ANGELES ORPHAN WELLS

- ◆ There are 5,131 known oil and gas wells in the City of Los Angeles. Of those, 825 are active and 3,149 are plugged and abandoned (permanently sealed). The total includes 266 idle wells visible at the surface, 56 of which are orphan wells. The total also includes 891 known wells that are idle and buried; all but 21 are orphan wells. All but 50 of those 891 idle/buried/orphan wells are in the Los Angeles City field.
- ◆ The risk associated with these orphan wells is moderate. In the early 1900s the Los Angeles Basin produced about a quarter of the world's oil. There was no regulatory structure in place at that time, so operators disposed of wells in whatever manner they saw fit, often burying them and building over them. Many of these wells were abandoned prior to 1915, the year the Division of Oil, Gas, and Geothermal Resources was created. Most of these old wells have existed under and around structures for decades without incident. Occasionally, an old well will begin seeping gas, oil, and/or water, typically at a very low rate and volume. Where there is adequate ventilation, the gas usually dissipates quickly. The gas in these wells occurs naturally in the ground at a much lower pressure and volume than in a gas storage field, so a leak like what occurred in Aliso Canyon in late 2015 and early 2016 could not occur here.

TWO PROBLEMATIC ECHO PARK WELLS

- ◆ The Division recently learned that two old, orphan wells in the Granite Hill neighborhood of Echo Park near downtown Los Angeles are leaking small amounts of gas – a potential health and safety concern.
- ◆ Both wells are located within feet of the front door of residences on a narrow cul-de-sac.
- ◆ The two wells -- Patel 1 and Rogalske 10 – were both drilled sometime prior to 1903. The Division has no

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subsurface construction records for either well.

◆ Patel 1 has been classified as an orphan well since 2006. The Division attempted in 2014 to contract the abandonment of this well, but the bid amounts exceeded the available budget. In 2015, the Division received odor complaints across the street from Patel 1. In December 2015, a property owner uncovered the buried H. Rogalske 10 well near the location of the odor complaints. The well was found to be unsecured and leaking. It was decided to remediate both of these potential hazards at the same time.

◆ There is no record of production from the Rogalske well. The well construction consists of a redwood box casing with an opening measuring 10 inches by 12 inches. Based upon records of similar wells in the area, the well is believed to be between 1,000 and 1,500 feet deep.

◆ Testing conducted on April 25, 2016, showed negligible readings for both methane and hydrogen sulfide at the surface. However, there was a noticeable “rotten egg” smell near the well, indicative of low concentrations of hydrogen sulfide.

◆ Patel 1 has been known by a number of names over the years. Between 1977 and 2003, the well produced 9,855 barrels of oil. There are no production records prior to 1977.

SEALING THE WELLS

◆ The Division’s contractor will perform a variety of tasks to plug and abandon the wells and restore the well locations over the course of approximately six weeks. The contractor will use equipment suited for tight locations. Before the well work starts, overhead utility service (power, phone, and cable) will be temporarily rerouted to provide for overhead access to the wells.

◆ The well abandonments are being done under a time and materials contract, with a maximum expenditure of \$367,826.08 for both wells

◆ Specialized equipment will be brought in to evaluate the mechanical condition of the Patel 1 well, located at 324 Firmin Street. Following the evaluation, both well sites will be prepared by temporarily removing fencing, concrete, and debris and placing temporary cellars and fencing around the wells. Site preparation is expected to take a week. Well servicing equipment will then be moved in. That will entail closing the street to all vehicle traffic from the cul-de-sac to 336 Firmin for approximately 3 to 4 weeks.

◆ To ensure safety, well plugging and abandonment probably will begin at Patel 1 with the installation of well control equipment. Pipe will be placed all the way to the bottom of the well to completely fill it with cement. Well servicing equipment will then be moved to the Rogalske 10 well, located at 323 Firmin Street. The initial operation to secure the well will take place without stopping, possibly requiring 24 hours. The well will be cleaned out to 200 feet, and steel pipe will be cemented into the well to provide for the installation of safety equipment. Ultimately the well will be filled with cement.

◆ Once the wells are permanently sealed, the street will be reopened to traffic. Power, phone, and cable service will be returned to their original routing. Complete site restoration will take about a week.

◆ The public is likely to experience inconveniences during the project. Power, phone, and cable service interruptions of up to two hours will take place at the beginning and the end of the project. When well service equipment is on location (about four weeks), traffic control will be in effect, and about one-third of Firmin Street will be blocked. Emergency vehicle access will be maintained. Heavy equipment and vehicles will use Firmin and Temple streets to access the work site daily. Residents and visitors may have difficulty finding parking, and will be required to walk to homes beyond the barricade. Work will generally only occur during daylight hours. All reasonable efforts will be made to mitigate inconveniences.